

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for a mobile agent object to discover services available in a host- computing environment, the method comprising:

the mobile agent object migrating from a first electronic device to a second electronic device comprising the host environment, the mobile agent object operable to execute in the first electronic device, halt execution in the first electronic device at an execution state, be transplanted to the second electronic device, and resume execution from the execution state in the second electronic device;

after the mobile agent object migrates to the second electronic device, the mobile agent object requesting a service listing from the host environment, ~~the mobile agent object operable to execute in a first electronic device, halt execution in the first electronic device at an execution state, be transplanted to a second electronic device, and resume execution from the execution state in the second electronic device;~~

the host environment returning a service listing to the mobile agent object in response to the request for the service listing;

the mobile agent object determining if a particular service is within the returned service listing; and

the mobile agent object requesting the particular service if the particular service is determined by the mobile agent object to be within the returned service listing.
2. (Original) The method of claim 1, further comprising the mobile agent

object moving to a computing environment other than the host-computing environment in response to determining that the particular service is not within the returned service listing.

3. (Original) The method of claim 1, further comprising
the host environment providing the particular service to the mobile agent object;

and the mobile agent object incorporating the particular service.

4. (Original) The method of claim 3, further comprising the mobile agent object moving to a computing environment other than the host-computing environment in response to incorporating the particular service.

5. (Original) The method of claim 3, further comprising
the mobile agent object determining if a second particular service is within the returned service listing;
the mobile agent object requesting the second particular service if the second particular service is determined by the mobile agent object to be within the returned service listing;

the host environment providing the second particular service to the mobile agent object; and

the mobile agent object incorporating the second particular service.

6. (Original) The method of claim 3 wherein the incorporated service comprises data.

7. (Original) The method of claim 3 wherein the incorporated service comprises a process.

8. (Currently Amended) A method for an audit system in a host-computing environment to audit service events from a mobile agent object, the method comprising:

| the host environment receiving the mobile agent object from a first

electronic device;

after the mobile agent object is received by the host environment, the audit system detecting a request for a service by athe mobile agent object, the service being implemented in the host-computing environment;

the audit system generating an audit event in response to detecting the request; and

the audit system logging the audit event in a database.

9. (Original) The method of claim 8, further comprising the audit system notifying at least one audit plug-in in response logging the audit event.

10. (Original) The method of claim 9, further comprising the audit plug-in retrieving data from the database in response to the notifying.

11. (Original) The method of claim 8 wherein the request for a service is a request for a directory service.

12. (Original) The method of claim 8 wherein the generating an audit event comprises

communicating with a processor in the host-computing environment using an application program interface.

13. (Original) The method of claim 8, further comprising:

the audit system detecting a second request for a service by a mobile agent object;

the audit system generating a second audit event in response to detecting the second request; and

the audit system logging the second audit event in a database.

14. (Currently Amended) A method for monitoring the activity of a mobile agent object, the method comprising:

the mobile agent object migrating from a first electronic device to a

second electronic device comprising a host-computing environment, the mobile agent object operable to execute in the first electronic device, halt execution in the first electronic device at an execution state, be transplanted to the second electronic device, and resume execution from the execution state in the second electronic device;

a—after the mobile agent object migrates to the second electronic device, the host-computing environment returning a service listing to the mobile agent object residing therein in response to a request for the service listing by the mobile agent object, the mobile agent object operable to execute in a first electronic device, halt execution in the first electronic device at an execution state, be transplanted to a second electronic device, and resume execution from the execution state in the second electronic device;

the mobile agent object requesting a particular service if the particular service is determined by the mobile agent object to be within the returned service listing;

an audit system generating an audit event in response to the request for the particular service; and

the audit system logging the audit event in a database.

15. (Original) The method of claim 14, further comprising:

the host-computing environment providing the particular service to the mobile agent object; and

the mobile agent object incorporating the particular service.

16. (Original) The method of claim 14, further comprising the audit system notifying at least one audit plug-in in response logging the audit event.

17. (Original) The method of claim 16, further comprising the audit plug-in retrieving data from the database in response to the notifying.

- 18 (Currently Amended) A computer system for hosting a mobile agent object having discovery ability, the system comprising:
- a processor operable to facilitate communications between computer systems coupled by a network; and
 - a memory coupled to the processor, the memory comprising:
 - a mobile-agent runtime environment operable to host a mobile agent object after the mobile agent object migrates to the computer system, the mobile agent object operable to execute in a first electronic device, halt execution in the first electronic device at an execution state, be transplanted to a second electronic device, and resume execution from the execution state in the second electronic device;
 - a discovery service object operable to list service objects available to a mobile agent object in response to a discovery request from the hosted mobile agent object; and
 - at least one service object operable to interact with the mobile agent object in response to a request for the at least one service object by the mobile agent object.
19. (Original) The system of claim 18, further comprising an injector process within the memory, the injector process operable to launch the mobile agent object in the mobile agent runtime environment.
20. (Original) The system of claim 18 wherein the at least one service object comprises data.
21. (Original) The system of claim 18 wherein the at least one service object comprises a process.
22. (Original) The system of claim 18 wherein the at least one service object comprises a second mobile agent object.
23. (Original) The system of claim 18 wherein the at least one service

object comprises a second discovery service object.

24. (Currently Amended) A system for auditing the activity of a mobile agent object in a host-computing environment, the system comprising:

a processor operable to facilitate communications between the host-computing environment and other computing environments coupled by a network; and

a memory coupled to the processor, the memory comprising:

a mobile-agent runtime environment operable to host a mobile agent object after the mobile agent object migrates to the computer system;

an audit system operable to detect a request for a service object by the hosted mobile agent object in the mobile-agent runtime environment, the service object being implemented in the host-computing environment; and

an audit database operable to log the request for the service object by the mobile agent object in response to the audit system detecting the request.

25. (Original) The system of claim 24 wherein the audit system is operable to generate a notification in response to detecting of the request.

26. (Original) The system of claim 25, further comprising at least one audit plug-in operable to retrieve data from the audit database in response to a notification from the audit system.

27. (Original) The system of claim 24, further comprising a network interface controller operable to facilitate the movement of the mobile agent object from the mobile-agent runtime environment to a second mobile-agent runtime environment.

28. (Original) The system of claim 27 wherein the second mobile-agent

runtime environment resides in a memory of one of the other computing environments.

29. (Original) The system of claim 27 wherein the second mobile-agent runtime environment resides in a second memory in the host-computing environment.

30. (Original) The system of claim 27 wherein the second mobile-agent runtime environment resides in a portion of the memory in the host-computing environment other than the portion of the memory where the first mobile-agent runtime environment resides.

31. (Currently Amended) A system for hosting a mobile agent object having discovery ability, the system comprising:

a first host-computing environment comprising:

a first processor operable to facilitate communications to and from a computer network; and

a first memory coupled to the first processor, the first memory comprising:

a first mobile-agent runtime environment operable to host a mobile agent object after the mobile agent object migrates to the first host-computing environment, the mobile agent object operable to execute in a first electronic device, halt execution in the first electronic device at an execution state, be transplanted to a second electronic device, and resume execution from the execution state in the second electronic device;

a first discovery service object having an application programming interface for communicating with the first processor in response to a discovery request from the mobile agent object; and

a first service object within the first mobile-agent runtime

environment operable to interact with the mobile agent object in response to a request for the first service object by the mobile agent object; and

a second host-computing environment coupled to the first host-computing environment by the computer network, the second host-computing environment comprising:

a second processor operable to facilitate communications to and from the first host-computing environment; and

a second memory coupled to the second processor, the second memory comprising:

a second mobile-agent runtime environment operable to host the mobile agent object after the mobile agent object migrates to the second host-computing environment;

a second discovery service object having an application programming interface for communicating with the second processor in response to a discovery request from the mobile agent object; and

a second service object within the second mobile-agent runtime environment operable to interact with the mobile agent object in response to a request for the second service object by the mobile agent object.

32. (Currently Amended) A computer-readable medium having stored thereon instructions that when executed by a computing device perform the steps of:

receiving from a mobile agent object a request for a service listing after the mobile agent object migrates to the computing device, the mobile agent object operable to execute in a first electronic device, halt execution in the first electronic device at an execution state, be transplanted to a second electronic device, and resume execution from the execution state in the

second electronic device;

returning a service listing to the mobile agent object in response to the request for the service listing; and

receiving from the mobile agent object a request for a particular service listed in the returned service listing.

33. (Currently Amended) A computer-readable medium having stored thereon ~~a data structure~~an object operable to execute in a first electronic device, halt execution in the first electronic device at an execution state, be transplanted to a second electronic device, and resume execution from the execution state in the second electronic device, ~~the data structure~~the object comprising:

a fourth instruction set that when executed by a computing device causes the object to migrate from the first electronic device to the second electronic device comprising a host environment, the mobile agent object operable to execute in the first electronic device, halt execution in the first electronic device at an execution state, be transplanted to the second electronic device, and resume execution from the execution state in the second electronic device;

a first instruction set that when executed by a computing device causes the data structureobject to request a service listing from ~~a~~the host environment;

a second instruction set that when executed by a computing device causes the object data structure to determine if a particular service is within a service listing returned by the host environment; and

a third instruction set that when executed by a computing device causes the object data structure to request the particular service if the particular service is determined by the object data structure to be within the returned

service listing.